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TEMPERATURE-SENSING DIODE

ABSTRACT OF THE DISCLOSURE

A temperature-sensing diode has an anode and a cathode disposed on top and an isolated, metallization layer on bottom of a diode die. For example, the temperature-sensing diode is a Schottky diode without a guard ring and any passivation, making the temperature-sensing diode inexpensive to fabricate, easy to attach in close proximity to a heat-generating device and resistant to electronic noise from high power devices and stray electronic signals. The location of the anode and cathode on the same surface of the diode package provides for easy connection, such as by wire bonds, with an external circuit for providing a constant forward bias current and for amplification of the output voltage signal by an operational amplifier. The isolated, metallization layer provides for easy attachment of the temperature-sensing diode in close proximity to heat-generating power devices. A dielectric film isolates the temperature-sensing diode from the metallization layer and underlying substrate.